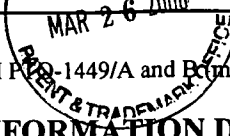


| | | | | | |
|---|---|----|---|--------------------------------|-----------------------------------|
|  FORM PTO-1449/A and B (modified PTO/SB/08) INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | | | APPLICATION NO.: 09/557,997 | ATTY. DOCKET NO.: M0656.70055US00 |
| | | | | FILING DATE: April 24, 2000 | CONFIRMATION NO.: 7686 |
| | | | | APPLICANT: Venkataraman et al. | |
| | | | | GROUP ART UNIT: 1631 | EXAMINER: Carolyn L. Smith |
| Sheet | 1 | of | 5 | | |

U.S. PATENT DOCUMENTS

| Examiner's Initials # | Cite No. | U.S. Patent Document | | Name of Patentee or Applicant of Cited Document | Date of Publication or Issue of Cited Document MM-DD-YYYY |
|-----------------------|----------|----------------------|-----------|---|---|
| | | Number | Kind Code | | |
| | | 4,455,380 | | Adachi | 06-19-1984 |
| | | 5,770,420 | | Lowe et al. | 06-1998 |
| | | 6,228,654 | B1 | Chait et al. | 05-08-2001 |
| | | 6,319,680 | B1 | Yasuno et al. | 11-20-2001 |
| | | 6,610,484 | B1 | Hung | 08-26-2003 |
| | | 7,129,335 | B2 | Pojasek et al. | 10-31-2006 |
| | | 7,139,666 | B2 | Venkataraman | 11-21-2006 |
| | | 7,247,445 | B2 | Sasisekharan et al. | 07-24-2007 |
| | | 7,270,815 | A1 | Sasisekharan et al. | 09-18-2007 |
| | | 2006-0292130 | A1 | Sasisekharan et al. | 12-28-2006 |
| | | 2006-0292655 | A1 | Sasisekharan et al. | 12-28-2006 |
| | | 2006-0292673 | A1 | Sasisekharan et al. | 12-28-2006 |
| | | 2007-0004012 | A1 | Sasisekharan et al. | 01-04-2007 |
| | | 2007-0020243 | A1 | Sengupta et al. | 01-25-2007 |
| | | 2007-0065424 | A1 | Pojasek et al. | 03-22-2007 |
| | | 2007-0065921 | A1 | Sasisekharan et al. | 03-22-2007 |
| | | 2007-0066769 | A1 | Venkataraman et al. | 03-22-2007 |
| | | 2007-0148157 | A1 | Prabhakar et al. | 06-28-2007 |
| | | 2007-0148158 | A1 | Sasisekharan et al. | 06-28-2007 |
| | | 2007-0148740 | A1 | Prabhakar et al. | 06-28-2007 |
| | | 2007-0161073 | A1 | Sasisekharan et al. | 07-12-2007 |
| | | 2007-0202563 | A1 | Prabhakar et al. | 08-30-2007 |
| | | 2007-0224670 | A1 | Prabhakar et al. | 09-27-2007 |

FOREIGN PATENT DOCUMENTS

| Examiner's Initials # | Cite No. | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Translation (Y/N) |
|-----------------------|----------|-------------------------|----------|-----------|---|--|-------------------|
| | | Office/Country | Number | Kind Code | | | |
| | | WO | 97/16556 | | Massachusetts Institute of Technology | 05-09-1997 | |
| | | WO | 00/65521 | A2 | Massachusetts Institute of Technology | 11-02-2000 | |
| | | WO | 01/66772 | | Massachusetts Institute of Technology | 09-13-2001 | |
| | | WO | 02/23190 | | Massachusetts Institute of Technology | 03-21-2002 | Y - Abstract |

EXAMINER:

/Carolyn Smith/

DATE CONSIDERED:

04/07/2008

| | | | | | | | |
|---|---|----|---|--------------------------------|--|-----------------------------------|--|
| FORM PTO-1449/A and B (modified PTO/SB/08) INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | | | APPLICATION NO.: 09/557,997 | | ATTY. DOCKET NO.: M0656.70055US00 | |
| | | | | FILING DATE: April 24, 2000 | | CONFIRMATION NO.: 7686 | |
| | | | | APPLICANT: Venkataraman et al. | | | |
| | | | | GROUP ART UNIT: 1631 | | EXAMINER: Carolyn L. Smith | |
| Sheet | 2 | of | 5 | | | | |

| Examiner's Initials # | Cite No. | Foreign Patent Document | | | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited Document MM-DD-YYYY | Translation (Y/N) |
|--------------------------|-------------|-------------------------|-------------|--------------|--|---|----------------------|
| | | Office/ Country | Number | Kind Code | | | |
| | | WO | 02/32406 | | Massachusetts Institute of Technology | 04-25-2002 | |
| | | WO | 02/077199 | | Massachusetts Institute of Technology | 10-03-2002 | |
| | | WO | 2003/102160 | | Massachusetts Institute of Technology | 12-11-2003 | |
| | | WO | 2004/055491 | | Massachusetts Institute of Technology | 07-01-2004 | |
| | | WO | 2004/062592 | | Massachusetts Institute of Technology | 07-29-2004 | |
| | | WO | 2004/069152 | | Massachusetts Institute of Technology | 08-19-2004 | |
| | | WO | 2005/087920 | | Massachusetts Institute of Technology | 09-22-2005 | |
| | | WO | 2005/110438 | | Massachusetts Institute of Technology | 11-24-2005 | |
| | | WO | 2005/111627 | | Massachusetts Institute of Technology | 11-24-2005 | |
| | | WO | 2006/076627 | | Massachusetts Institute of Technology | 07-20-2006 | |
| | | WO | 2006/083328 | | Massachusetts Institute of Technology | 08-10-2006 | |
| | | WO | 2006/088491 | | Massachusetts Institute of Technology | 08-24-2006 | |
| | | WO | 2006/105313 | A2 | Massachusetts Institute of Technology | 10-05-2006 | |
| | | WO | 2006/105315 | A2 | Massachusetts Institute of Technology | 10-05-2006 | |
| | | WO | 2007/044471 | A2 | Massachusetts Institute of Technology | 04-19-2007 | |
| | | WO | 2007/120478 | A2 | Massachusetts Institute of Technology | 10-25-2007 | |
| | | FR | 2554348 | | Leon et al. | 05-10-1985 | |

OTHER ART — NON PATENT LITERATURE DOCUMENTS

| Examiner's Initials # | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | Translation (Y/N) |
|--------------------------|------------|---|----------------------|
| | | ABUSHOUFA et al. "The development of a sialic acid specific lectin-immunoassay for the measurement of human chorionic gonadotrophin glycoforms in serum and its application in normal and Down's syndrome pregnancies", <i>Clinical endocrinology</i> , vol. 52, no. 4, (April 2000) 499-508. Abstract only. | |
| | | APFFEL et al. "Application of new analytical technology to the production of a 'well-characterized biological'", <i>Developments in biological standardization</i> , vol. 96 (1998) 11-25. Abstract only. | |
| | | BIHOREAU et al. "Combination of capillary electrophoresis and matrix-assisted laser desorption ionization mass spectrometry for glycosylation analysis of a human monoclonal anti-Rhesus(D) antibody", <i>J Chromatogr B Biomed Sci Appl.</i> , September 12, 1997; 697(1-2):123-33. | |

| | |
|----------------------------------|------------------------------------|
| EXAMINER: /Carolyn Smith/ | DATE CONSIDERED: 04/07/2008 |
|----------------------------------|------------------------------------|

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered.

Include copy of this form with next communication to Applicant.
1355019.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /GS/

| | | | | | | | |
|---|---|----|---|--------------------------------|--|-----------------------------------|--|
| FORM PTO-1449/A and B (modified PTO/SB/08) INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | | | APPLICATION NO.: 09/557,997 | | ATTY. DOCKET NO.: M0656.70055US00 | |
| | | | | FILING DATE: April 24, 2000 | | CONFIRMATION NO.: 7686 | |
| | | | | APPLICANT: Venkataraman et al. | | | |
| | | | | GROUP ART UNIT: 1631 | | EXAMINER: Carolyn L. Smith | |
| Sheet | 3 | of | 5 | | | | |

| Examiner's Initials # | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | Translation (Y/N) |
|-----------------------|---------|---|-------------------|
| | | CARLSON et al., Biosynthesis of abnormally glycosylated alpha 1-antitrypsin by a human hepatoma cell line. <i>Hepatology</i> . 1984 Mar-Apr;4(2):235-41. | |
| | | COULOMBE et al., Elucidating the early stages of keratin filament assembly. <i>J Cell Biol</i> . 1990 Jul;111(1):153-69. | |
| | | DENNIS et al., Beta 1-6 branching of Asn-linked oligosaccharides is directly associated with metastasis. <i>Science</i> . 1987 May 1;236(4801):582-5. | |
| | | DENNIS et al. "Glycoprotein glycosylation and cancer progression", <i>Biochim Biophys Acta</i> , December 6, 1999; 1473(1):21-34. | |
| | | FELDMAN et al., Identification of a linear heparin binding domain for human respiratory syncytial virus attachment glycoprotein G. <i>J Virol</i> . 1999 Aug;73(8):6610-7. | |
| | | FERENS-SIECZKOWSKA et al. "Haptoglobin glycoforms in a case of carbohydrate-deficient glycoprotein syndrome", <i>Glycoconjugate J</i> , October 1999; 16(10):573-7. | |
| | | FERNANDES et al. "Beta 1-6 branched oligosaccharides as a marker of tumor progression in human breast and colon neoplasia", <i>Cancer Res</i> , January 15, 1991; 51(2):718-23. | |
| | | GERWIG et al. "Analysis of glycoprotein-derived glycopeptides", <i>Proteomics in Functional Genomics</i> , EXS, Birkhaeuser Verlag 2000; 88:159-86. | |
| | | HAHN et al., Growth-associated glycosylation of transferrin secreted by HepG2 cells. <i>J Biol Chem</i> . 1992 Nov 25;267(33):23982-7. | |
| | | HANLEY et al., Biosynthesis and processing of rat haptoglobin. <i>J Biol Chem</i> . 1983 Jun 25;258(12):7858-69. | |
| | | HARVEY "Identification of cleaved oligosaccharides by matrix-assisted laser desorption/ionization", <i>Methods Mol. Biol</i> , vol. 61 (1996) 243-53. | |
| | | HARVEY, "Quantitative aspects of the matrix-assisted laser desorption mass spectrometry of complex oligosaccharides", <i>Rapid Commun Mass Spectrom</i> , vol. 7, no. 7 (July 1993) 614-9. | |
| | | HORNER et al., Heterogeneity of rat skin heparin chains with high affinity for antithrombin. <i>Biochem J</i> . 1987 Jun 15;244(3):693-8. | |
| | | IWASE et al. "Application of matrix-assisted laser desorption ionization time-of-flight mass spectrometry to the analysis of glycopeptide-containing multiple O-linked oligosaccharides", <i>Journal of Chromatography, B, Biomedical sciences and applications</i> , vol. 709, no. 1 (May 8, 1998), 145-9. Abstract only. | |
| | | JOAO et al. "Effects of glycosylation on protein structure and dynamics in ribonuclease B and some of its individual glycoforms," <i>Eur. J. Biochem</i> , November 15, 1993; 218(1):239-44. | |
| | | JØRGENSEN et al., Up-regulation of the oligosaccharide sialyl LewisX: a new prognostic parameter in metastatic prostate cancer. <i>Cancer Res</i> . 1995 May 1;55(9):1817-9. | |
| | | JUHASZ et al. "Utility of non-covalent complexes in the matrix-assisted laser desorption ionization mass spectrometry of heparin-derived oligosaccharides", <i>Carbohydr Res</i> , April 30, 1995; 270(2):131-47. | |
| | | JUHASZ et al., "Mass spectrometric molecular-weight determination of highly acidic compounds of biological significance via their complexes with basic polypeptides", <i>Proc. Natl. Acad. Sci. USA</i> , May 1994; 91:4333-7. | |

| | |
|-----------------|------------------|
| EXAMINER: | DATE CONSIDERED: |
| /Carolyn Smith/ | 04/07/2008 |

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered.

Include copy of this form with next communication to Applicant.

1355019.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /CS/

| | | | | | |
|--|---|----|---|--------------------------------|-----------------------------------|
| FORM PTO-1449/A and B (modified PTO/SB/08) INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | | | APPLICATION NO.: 09/557,997 | ATTY. DOCKET NO.: M0656.70055US00 |
| | | | | FILING DATE: April 24, 2000 | CONFIRMATION NO.: 7686 |
| | | | | APPLICANT: Venkataraman et al. | |
| | | | | GROUP ART UNIT: 1631 | EXAMINER: Carolyn L. Smith |
| Sheet | 4 | of | 5 | | |

| Examiner's Initials # | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | Translation (Y/N) |
|-----------------------|---------|--|-------------------|
| | | KANNAGI et al., Carbohydrate-mediated cell adhesion involved in hematogenous metastasis of cancer. <i>Glycoconj J.</i> 1997 Aug;14(5):577-84. | |
| | | KIM et al., Perspectives on the significance of altered glycosylation of glycoproteins in cancer. <i>Glycoconj J.</i> 1997 Aug;14(5):569-76. | |
| | | KISHIBE et al., Structural requirements of heparan sulfate for the binding to the tumor-derived adhesion factor/angiomodulin that induces cord-like structures to ECV-304 human carcinoma cells. <i>J Biol Chem.</i> 2000 May 19;275(20):15321-9. | |
| | | KREUGER et al., "Characterization of fibroblast growth factor 1 binding heparan sulfate domain," <i>Glycobio.</i> (1999) 9(7):723-9. | |
| | | KÜSTER et al., 18O-labeling of N-glycosylation sites to improve the identification of gel-separated glycoproteins using peptide mass mapping and database searching. <i>Anal Chem.</i> 1999 Apr 1;71(7):1431-40. | |
| | | LACKO et al. "Characterization of recombinant human plasma lecithin: cholesterol acyltransferase (LCAT): N-linked carbohydrate structures and catalytic properties, <i>J Lipid Res.</i> , April 1998; 39(4):807-20. | |
| | | MATSUURA et al. "Human α -galactosidase A: characterization of the N-linked oligosaccharides on the intracellular and secreted glycoforms overexpressed by Chinese hamster ovary cells", <i>Glycobiology</i> , vol. 8, no. 4, (1998) 329-339. | |
| | | MERRY, "Current techniques in protein glycosylation analysis. A guide to their application", <i>Acta Biochimica Polonica</i> , 1999; 46(2):303-14. | |
| | | NESHEIM et al., Dependence of antithrombin III and thrombin binding stoichiometries and catalytic activity on the molecular weight of affinity-purified heparin. <i>J Biol Chem.</i> 1986 Mar 5;261(7):3214-21. | |
| | | NIMTZ "Structural characterization of the oligosaccharide chains of native and crystallized boar seminal plasma spermadhesin PSP-I and PSP-II glycoforms", <i>European journal of biochemistry/FEBS</i> , vol. 265, no. 2 (October 1999) 703-18. | |
| | | NUGENT, Heparin sequencing brings structure to the function of complex oligosaccharides. <i>PNAS</i> 2000 Sept 12; 97(19):10301-3. | |
| | | ODANI "Direct evidence for decreased sialylation and galactosylation of human serum IgA1 Fc O-glycosylated hinge peptides in IgA nephropathy by mass spectrometry", <i>Biochemical and Biophysical Research Communications</i> , vol. 271, no. 1, (April 29, 2000) 268-74. Abstract only. | |
| | | ORNTOT et al., "Clinical aspects of altered glycosylation of glycoproteins in cancer", <i>Electrophoresis</i> , February 1999; 20(2):362-71. | |
| | | PAPAC et al., A high-throughput microscale method to release N-linked oligosaccharides from glycoproteins for matrix-assisted laser desorption/ionization time-of-flight mass spectrometric analysis. <i>Glycobiology.</i> 1998 May;8(5):445-54. | |
| | | PARTHASARATHY et al., "Oligosaccharide sequence of human breast cancer cell heparan sulfate with high affinity for laminin," <i>J. Biol. Chem.</i> (1998) 273(33):21111-4. | |
| | | PIERCE et al., Regulation of N-acetylglucosaminyltransferase V and Asn-linked oligosaccharide beta(1,6) branching by a growth factor signaling pathway and effects on cell adhesion and metastatic potential. <i>Glycoconj J.</i> 1997 Aug;14(5):623-30. | |

| | |
|-----------------|------------------|
| EXAMINER: | DATE CONSIDERED: |
| /Carolyn Smith/ | 04/07/2008 |

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered.

Include copy of this form with next communication to Applicant.
1355019.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /CS/

| | | | | | | | |
|--|---|----|---|--------------------------------|--|-----------------------------------|--|
| FORM PTO-1449/A and B (modified PTO/SB/08) INFORMATION DISCLOSURE STATEMENT BY APPLICANT | | | | APPLICATION NO.: 09/557,997 | | ATTY. DOCKET NO.: M0656.70055US00 | |
| | | | | FILING DATE: April 24, 2000 | | CONFIRMATION NO.: 7686 | |
| | | | | APPLICANT: Venkataraman et al. | | | |
| | | | | GROUP ART UNIT: 1631 | | EXAMINER: Carolyn L. Smith | |
| Sheet | 5 | of | 5 | | | | |

| Examiner's Initials # | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | Translation (Y/N) |
|-----------------------|---------|---|-------------------|
| | | PILI et al., The alpha-glucosidase I inhibitor castanospermine alters endothelial cell glycosylation, prevents angiogenesis, and inhibits tumor growth. <i>Cancer Res.</i> 1995 Jul 1;55(13):2920-6. | |
| | | POWELL et al. "Natural ligands of the B cell adhesion molecule CD22 β carry N-linked oligosaccharides with α -2,6-linked sialic acids that are required for recognition", <i>J. Biol. Chem.</i> , April 5, 1993; 268(10):7019-27. | |
| | | PRAKASH et al., "Glycotyping of prostate specific antigen", <i>Glycobiology</i> , February 2000; 10(2):173-6. | |
| | | RAJU et al., "Species-specific variation in glycosylation of IgG: evidence for the species-specific sialylation and branch-specific galactosylation and importance for engineering recombinant glycoprotein therapeutics", <i>Glycobiology</i> , May 2000; 10(5):477-86. | |
| | | SASAKI et al., "Structural basis and potential role of heparin/heparan sulfate binding to the angiogenesis inhibitor endostatin," <i>Embo. J.</i> (1999) 18(22):6240-8. | |
| | | SCANLIN et al., "Terminal glycosylation and disease: influence on cancer and cystic fibrosis", <i>Glycoconj J.</i> , July-September 2000; 17(7-9):617-26. | |
| | | SEELTAG et al., Expression of CD44 isoforms and beta 1,6-branched oligosaccharides in human malignant melanoma is correlated with tumor progression but not with metastatic potential. <i>J Cutan Pathol.</i> 1997 Apr;24(4):206-11. | |
| | | SHIMODAIRA et al. "Carcinoma-associated expression of core 2 beta-1,6-N-acetylglucosaminyltransferase gene in human colorectal cancer: role of O-glycans in tumor progression", <i>Cancer Res.</i> , December 1, 1997; 57(23):5201-6. | |
| | | TAKETA "Characterization of sugar chain structures of human alpha-fetoprotein by lectin affinity electrophoresis", ibarahp@oka.urban.ne.jp , <i>Electrophoresis</i> , vol. 19, no. 15, (November 1998) 2595-602. Abstract only. | |
| | | VOLPI N. et al. "Fast moving" and "slow moving" heparins, dermatan sulfate, and chondroitin sulfate: qualitative and quantitative analysis by agarose-gel electrophoresis" <i>Carb. Res.</i> , 247:263-278, 1993 | |
| | | YOUSEFI et al., Increased UDP-GlcNAc:Galbeta1-3GalNAc-R (GlcNAc to GalNAc) beta-1,6-N-acetylglucosaminyltransferase activity in metastatic murine tumor cell lines. Control of polyactosamine synthesis. <i>J Biol Chem.</i> 1991 Jan 25;266(3):1772-82. | |

*a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. __, filed __, and relied upon for an earlier filing date under 35 U.S.C. 120 (continuation, continuation-in-part, and divisional applications).

[NOTE - No copies of U.S. patents, published U.S. patent applications, or pending, unpublished patent applications stored in the USPTO's Image File Wrapper (IFW) system, are included. See 37 CFR §1.98 and 1287OG163. Copies of all other patent(s), publication(s), unpublished, pending U.S. patent applications, or other information listed are provided as required by 37 CFR §1.98 unless 1) such copies were provided in an IDS in an earlier application that complies with 37 CFR §1.98, and 2) the earlier application is relied upon for an earlier filing date under 35 U.S.C. §120.]

| | |
|----------------------------------|------------------------------------|
| EXAMINER: /Carolyn Smith/ | DATE CONSIDERED: 04/07/2008 |
|----------------------------------|------------------------------------|

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered.

Include copy of this form with next communication to Applicant.
1355019.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /CS/